Tennessee Pollution Prevention Partnership Success Story

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Hazardous Waste Reduction Extends Landfill Life

The Member

Olin Corporation in Charleston, Bradley County, TN is one of the areas industrial employers of choice. Olin began production in 1961 and today employees over 300 associates, many of whom are long term and others are second-generation Olin employees. Olin's vision of "The Goal is Zero" is an unprecedented approach at assuring future viability for the company. "The Goal is Zero" simply means that Olin is striving to one-day see zero releases, zero incidents, and zero waste disposal. Olin's management has always been dedicated to assuring quality in their actions, products, and their community and has created a team-based culture focused on the company vision. By providing employees with real time, accurate business information and an open environment of trust and communication, Olin has fostered a culture of innovation.

The Story

Olin Corporation is one of the world's leading manufacturers of chlorine and caustic, and it is Olin's desire to be one of the pioneers in ensuring environmental awareness among its employees and the local community. All employees at Olin participate in a gain-sharing program in which approximately twenty-five percent of the payout is based on the facility' environmental and safety performance. In an effort to reduce exposure of hazardous material to the environment, Olin erected a state-of-the-art hazardous waste dome landfill in 1985. The landfill was anticipated to provide ten years of useful life for the operation. However, throughout the operation of the landfill, the Olin Environmental Management Team has continually looked for ways to reduce the amount of material generated at the facility that is destined for the landfill in order to extend its useful life, which led to one of its successes.

The Success

One of the primary items being placed in the landfill was hazardous brine purification mud that is approximately 95% sand with the remaining 5% consisting of water, salt, carbonates, and trace amounts of mercury. Brine purification mud is a by-product of the chlor-alkali process, and over the past five years, Olin engineers and researchers have held hundreds of meetings, developed numerous tests and procedures, and have installed various improvements to enhance the process, reduce the mercury, and ultimately reduce the amount of waste being disposed of as a hazardous substance. The researchers found that by increasing the amount of available chlorine in the production system, the mercury would stay in solution allowing it to be recovered and immediately returned to the process rather than captured as a hazardous waste in the brine muds (amount recaptured is to be determined). In the early days of the landfill and at the onset of the project, the facility was land filling over 3300 tons of the brine purification mud per year. Minor improvements were achieved in 2001 when only 2300 tons were generated; however the real savings came in 2003 & 2004.

The Pollution Prevented

In 2003, Olin generated 550 tons of hazardous brine purification mud which is approximately 17% of the 2000 baseline, yet in 2004 generation declined to approximately 138 tons; a 75% reduction from the prior year. This reduction in hazardous waste has extended the life of Olin's hazardous waste landfill indefinitely, saving the company approximately **$7,500,000** over the next 20 years when at the initial rate, the landfill would have been full ten years ago.

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